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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,302	10/27/2006	Fuminobu Hirose	Q94419	1879
23373 7590 12/27/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER HEINCER, LIAM J	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 12/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/581,302

Applicant(s)

HIROSE ET AL.

Examiner

Liam J. Heincer

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/2007</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Autran (US 2003/0204027) in view of Shimizu (2002/0173583) taken with McGraw "New Uses For Kenaf".

Considering Claim 1: Autran teaches a composition comprising a polyhydroxyalkanoate (¶0042) produced by biological organisms/microorganisms (¶0065) comprising a repeating unit as stated in the instant claim (Formulas I and II). Autran also teaches adding a filler to the composition (¶0113).

Autran does not teach the filler being made of kenaf fibers. However, Shimizu teaches using a kenaf filler in a filled polymer (¶0028). Autran and Shimizu are combinable as they are concerned with the same field of endeavor, namely filled polymer compositions. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used kenaf as the filler in the composition of Autran and the motivation would have been, as McGraw suggests, that kenaf is unlikely to warp under extreme temperature (pg. 15).

Considering Claim 2: Autran teaches using a copolymer that is a poly (3-hydroxybutyrate-3-hydroxyhexanoate) (¶0089 and 0091).

Considering Claim 3: Autran teaches the ratio of hydroxybutyrate to hydrohexanoate as being from 99/1 to 80/20 (¶0091).

Considering Claims 4, 11, and 12: Autran teaches the basic compositions of claims 1. Autran also teaches the polyalkanoate as being present in an amount between 99 to 30% by weight of the composition (¶0092).

Autran does not teach the kenaf fibers accounting for 1 to 70% of the composite by weight. However, Shimizu teaches using kenaf fibers in an amount that is between 1 and 70% by weight (¶0009). It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the kenaf in the amount

described in Shimizdu in the composition of Autran and the motivation would have been, as Shimizdu suggests, that it will increase heat resistance (§0002).

Considering Claim 5 and 13-15: Autran teaches the basic compositions of claims 1-4.

Autran does not teach the maximum fiber length of the kenaf fibers being shorter than 20 mm. However, Shimizdu teaches using of fibers that are less than 20 mm in length (§0029). It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used fibers of the length of Shimizdu in the composition of Autran and the motivation would have been, as Shimizdu suggests, that using fibers of this length provides an easiness in mixing (§0029).

Considering Claim 8: Autran teaches making a plastic article through injection molding (§0048).

Considering Claim 9: Autran teaches making a film or sheet from the composition (§0068).

Considering Claim 10: Autran teaches mixing the components of the composition (§0110) prior to processing the composition (§0117). Therefore the percentage of the kenaf fibers present on the surface of the molded product will be equivalent to the amount of kenaf fiber in the composition. Since the composition can contain less than 50% kenaf fibers the surface area can be less than 50% kenaf fibers in certain embodiments.

Considering Claims 6, 7, and 16-20: Autran teaches the basic compositions of claims 1-5.

The Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties, i.e. a lower melting point or a flexural modulus value would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

### ***Response to Arguments***

Applicant's arguments filed November 5, 2007 have been fully considered but they are not persuasive, because:

A) Applicant's argument that Autran does not positively add the filler to the composition is not persuasive. Although applicant is correct in noting that Autran teaches that the desired properties of toughness and ductility, there is nothing in the reference that would dissuade a person having ordinary skill in the art at the time of invention from adding an additive such as a filler when there is a clear motivation to do so. The Office has provided such a motivation in the evidentiary reference, McGraw, as shown above.

B) In response to applicant's argument that Autran and Shimzu are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the references are concerned with the same field of endeavor, namely providing moldable polymeric compositions that contain an inert filling material.

C) Applicant's argument that Shimizu merely discloses kenaf as an embodiment of the fiber fillers is unpersuasive. Applicant has failed to note the evidentiary reference McGraw et al., which specifically provides a motivation to choose kenaf for use in composite materials as shown in the rejection above. While Shimizu may not provide a motivation to specifically choose kenaf, a person having ordinary skill in the art at the time of invention would have found it obvious to use kenaf in the composition of Autran based on the teaching of McGraw et al..

D) Applicant's argument that the references fail to teach the improvement in the rate of crystallization and other properties is not persuasive. Mere allegations of unexpected results are not enough to differentiate the instant invention from the applied references. Improvements in properties will naturally occur due to a combination of

materials. This does not show that the result is unexpected, even in cases with a synergistic relationship. In order to show unexpected results, applicant must provide clear and convincing evidence that the result is unexpected, not merely a foreseeable improvement in the property.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIAM J. HEINCER whose telephone number is (571)270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

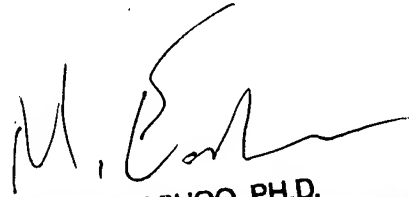
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJH

December 7, 2007

  
MARK EASHOO, PH.D.  
SUPERVISORY PATENT EXAMINER

22/Dec/07